OPERATOR'S AND SERVICE MANUAL
HOTLINE FLUID WARMER HL-90 115VAC

Table of Contents

Purpose	2
Concept	2
Safety	2
Description	
Hotline Hardware	3
Hotline Disposable	4
Unpacking Hotline Hardware	4
Set-up Hotline Hardware	5
Unpacking Hotline Disposable	
Set-up Hotline Disposable	
Maintenance	7
Service	8
Warranty	8
Trouble Shooting	9
Testing	10
Calibration	13
Recommended Periodic Maintenance Check List	15
Specifications	16
Electrical Schematic and Parts List	18
Exploded Views and Parts List	22

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(Revised June 25, 1992)

PURPOSE:

The Hotline Fluid Warmer is designed for safe inline warming of blood and I.V. fluids as they are administered to patients at low flow rates. An 8' Disposable Set allows 10 C blood to be delivered to the patient at near body temperature at flow rates to 3,000 mls per hour (50 ml per minute).

CONCEPT:

The Hotline is the first fluid warmer to deliver fluids at normothermic temperatures at low flow rates. All previous systems suffer from cool-off between the warmer and patient connection. The unique Hotline overcomes this problem by providing active warming of the patient line almost all the way to the patient connection. Cool-off is nearly eliminated. The active warming is achieved by surrounding the patient line with precisely temperature controlled circulating water. The water flows through its own pathways which completely surround the I.V. line.

The Hardware and Disposable of the Hotline are an integrated highly effective design with unparalleled ease of use. Properly trained users can confidently and safely have the Hotline set-up and operating within seconds.

SAFETY:

The Hotline Disposable set employs a unique Gas Eliminator which vents micro-bubbles of gas always released from fluids as they are warmed. In many warming systems, these micro- bubbles are actually delivered to the patient along with the warmed fluids.

TEMPERATURE CONTROL:

The Hotline employs a safe circulating water heating system, inherently free of "hot spots" to actively warm the patient line. The primary temperature control circuit limits the circulating water to 40 C maximum. In the unlikely event of a malfunction of this circuit, a second "watch-dog" circuit will visually and audibly alarm and stop the circulating water pump if the temperature reaches about 41 C. Fluid in the disposable set while the unit is operating is never exposed to any damaging or dangerous temperatures.

The Hotline is manufactured to be in compliance with UL-544 (HL-90) and IEC-601 (HL-90INT).

DESCRIPTION

HOTLINE HARDWARE: An on board water supply is precisely heated to 40 C by this unit and circulated through the Disposable Set. Electronic circuitry continuously monitors the water temperature, and will shut down the system and activate visual and audible alarms in the event of an over- temperature condition. Visual alarms and circulating water temperature are on the Display Panel on the front of the unit. (Figure 1) A green "OPERATING" light illuminates on this panel when the unit is set-up and operating correctly.

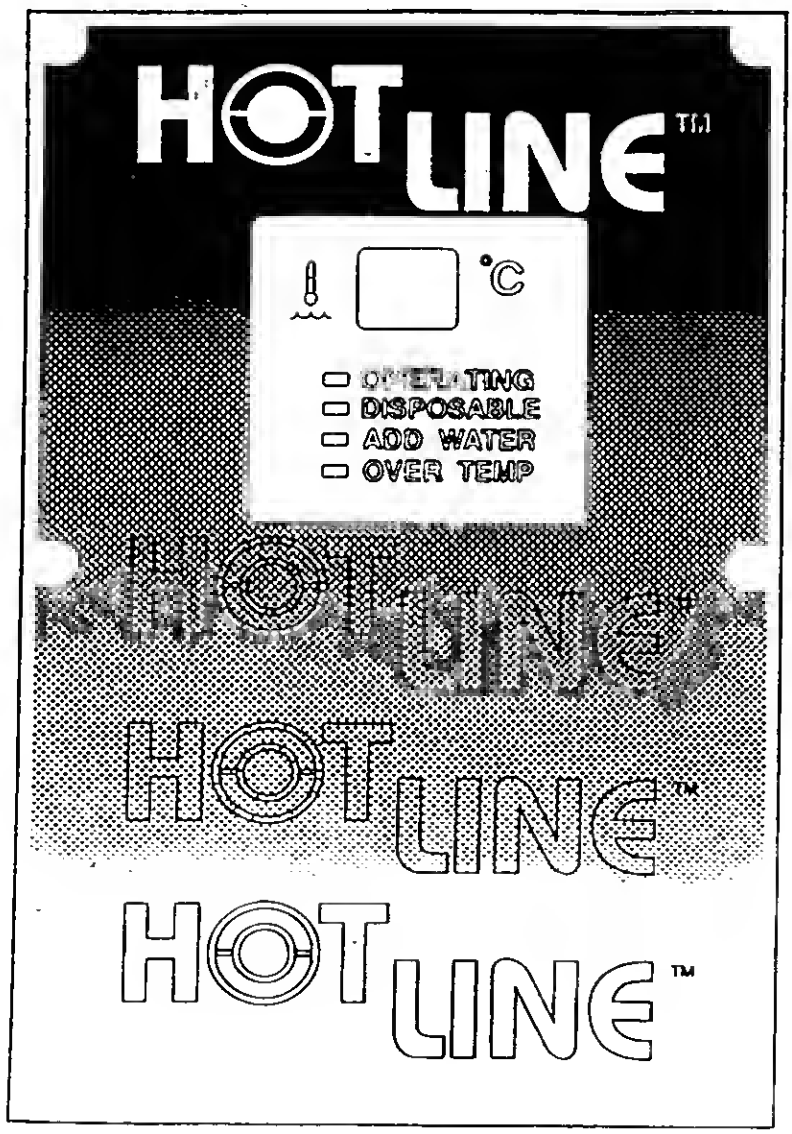


FIGURE 1 DISPLAY PANEL

HOTLINE DISPOSABLE: (Blood/I.V. Fluid Administration) Single Patient Use Disposable Sets are provided in single unit packaging with Sterile Fluid Path. A plug in fitting on the Disposable Set engages a socket in the Hotline Unit. This is the only connection necessary to provide the warming function. The Disposable Set is easily unpluged from the Hotline Unit and discarded, or it may be used to continue subsequent unwarmed infusion.

UNPACKING HOTLINE HARDWARE:

The Hotline is packaged in one box. Check for complete contents when unpacking. (Figure 2)

Contents	Quantity
Hotline	1
Operators & Service Manual	1

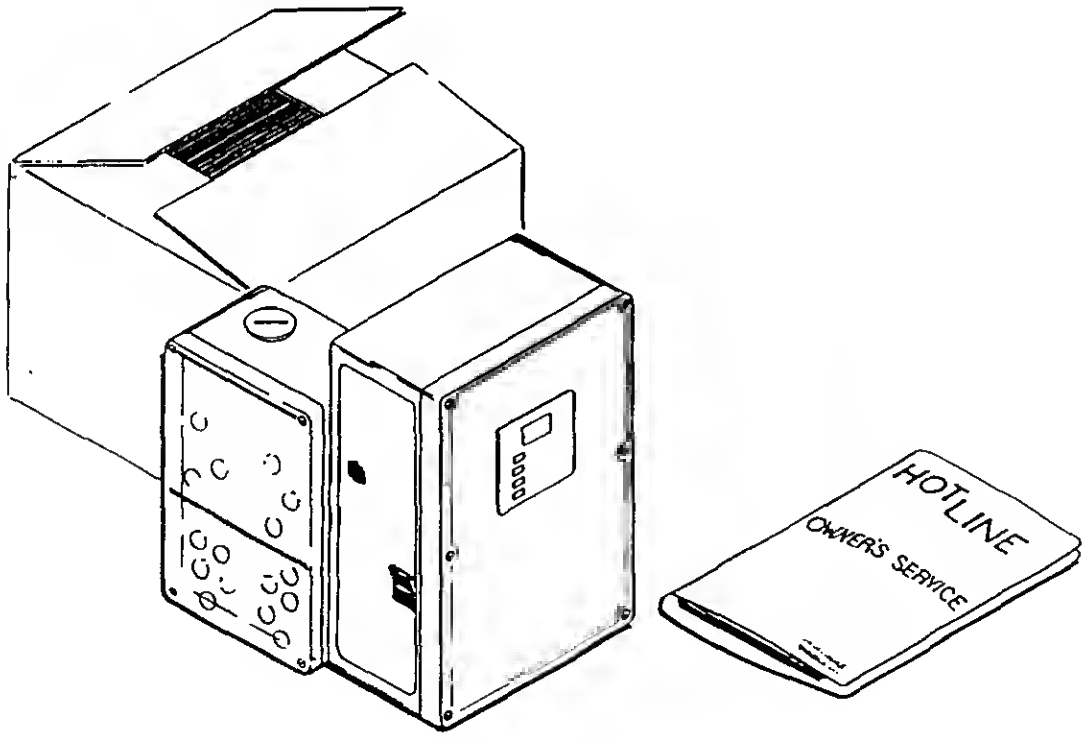


FIGURE 2 HOTLINE CONTENTS

SET-UP HOTLINE HARDWARE

This unit should be tested by hospital biomedical personal prior to placing it in service.

1. Clamp the Hotline securely to an I.V. pole. Be sure the I.V.Pole is in good condition.
   A good quality I.V. Pole is available from Level 1. Order P/N 80-01-081.

For stability, DO NOT MOUNT THE HOTLINE MORE THAN 42" ABOVE THE FLOOR. (Figure 3)

CAUTION:
This unit is cooled by convection. Be sure the air vents on the bottom and the back of the unit are kept clear.

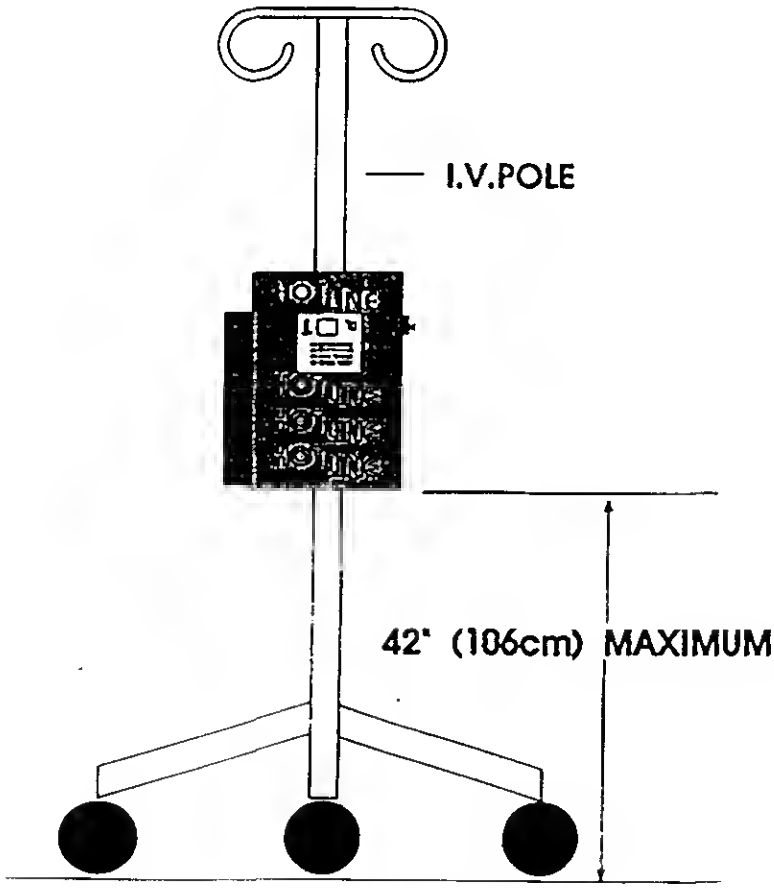


FIGURE 3 SET UP HOTLINE

2. Unscrew the fillport plug on the water tank.

3. Fill the water tank with 1.4 liters of distilled water.

NOTE: Do not fill Hotline water tank with a disposables set or a thermal well in place.

4. Replace the fillport plug.

5. Plug the Hotline into a 120VAC outlet.

NOTE: An interlock switch will not allow the unit to operate without a Disposable Set in place.

6. Plug the Twin-Tube Connector of a Hotline Disposable Set into the socket on the right side of the unit.(Figure 4) Be sure it is fully seated.
See complete priming & Set-Up instructions supplied with the Disposable Set.

7. Activate the power switch on the left side of the unit.
The green "OPERATING" light confirms proper operation. If any red light / audible alarms are active, refer to the trouble shooting section of this manual.

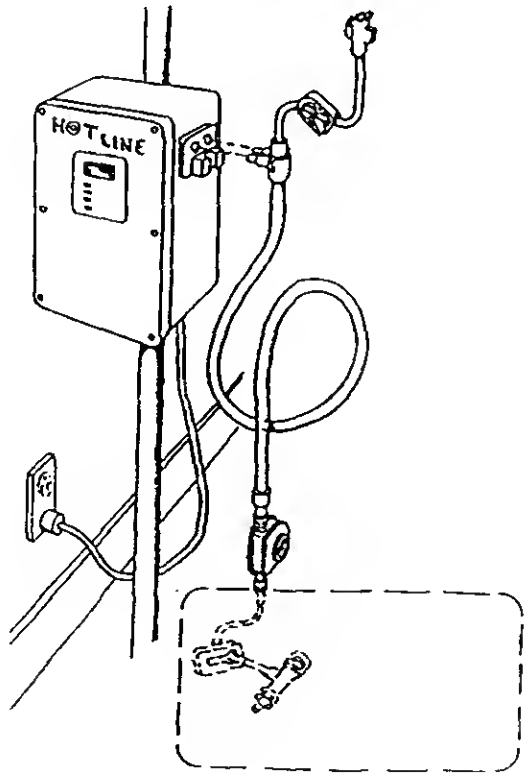


FIGURE 4 DISPOSABLE SET-UP

MAINTENANCE

CLEANING EVERY USE

Use only mild detergents, water and soft cloth

CAUTION Do not autoclave
Do not use abrasive cleaning agents
Do not use alcohols or solvents
Do not immerse any part of the Hotline in liquids

GENERAL INSPECTION EVERY USE

Visually check the condition of the unit. Remove from service any unit which shows physical damage or one in which the Hotline Disposable Set does not install easily.

CHANGE DISTILLED WATER EVERY 30 DAYS

1. Unplug the unit before servicing.
2. Remove the fillport plug from the water tank.
3. Invert the unit over a sink or suitable container to remove the water from the unit.
4. Re-attach to I.V.Pole.
5. Refill the unit with 1.4 Liters of distilled water.

NOTE: Do not fill Hotline water tank with a disposables set or a thermal well in place.

6. Install the fillport plug.

GREASE O-RING SEALS EVERY 30 DAYS

Using a cotton swab apply a small amount of silicone grease to the O-rings. Silicone grease is available from Level 1. Silicone Grease P/N 80-04-002

REPLACE O-RING SEALS (Figure 5) EVERY 12 MONTHS

1. Remove the socket head screws with a 1/8" hex wrench.
2. Remove the face plate, being careful not to damage the micro-switch lever.
3. Remove the old O-rings & clean their sockets with a cotton swab.
4. Apply silicone grease to 2 new O-rings and install into the sockets.
5. Reassemble in reverse order being careful not to damage the micro-switch lever.

O-Ring Kit: P/N 80-04-001

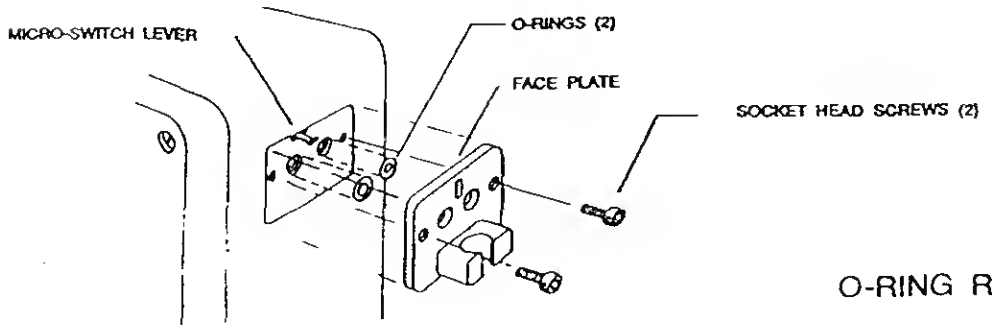


FIGURE 5

O-RING REPLACEMENT, HOTLINE HL-90

SERVICE

ALL SERVICE MUST BE PERFORMED BY LEVEL 1 TECHNOLOGIES OR ITS AUTHORIZED AGENTS. SERVICE BY OTHERS VOIDS THE WARRANTY AND TRANSFERS LIABILITY FOR MALFUNCTIONS OF THE DEVICE TO THE SERVICING ORGANIZATION. FOR SERVICE, CONTACT:
LEVEL 1 TECHNOLOGIES INC. 800-553-8351
(or your local distributor)

WARRANTY SERVICE
Units received for repair which have not been obviously abused or impact damaged and are still under warranty will be promptly repaired and returned at no charge. See the Limited Warranty section of this manual. A no-charge purchase order is requested for tracking.

NON-WARRANTY WORK
Units received which have suffered obvious abuse or impact damage and units no longer under Warranty will be promptly inspected and a verbal estimate of repair cost will be given to you. A purchase order will be required from the hospital consistent with the verbal estimate. A written estimate will be provided upon request.

Contact the Level 1 Service Department before shipping the Hotline to Level 1 for repair. The Service Department will issue you a Return Authorization Number (RAN). The Service Department will want to know the SERIAL NUMBER of your Hotline and a description of the problem.

Be sure that ALL water is drained from the Hotline before Packing any Hotline for repair shipment.

For service ship to:
Attn: Service Department <your RAN>
Level 1 Technologies, Inc.
160 Weymouth Street
Rockland, MA 02370

Include the following:
Hospital name
Address
Telephone number
Person to contact
Apparent problem
Your RAN
Your purchase order number

TROUBLESHOOTING

Problem:	Check:
No power	Unit plugged in? Power switch on? Note: If plugged in and power switch is on then the green or red LED's will glow.
DISPOSABLE alarm	Disposable properly installed?
ADD WATER alarm	Add distilled water to the water tank to the MAX fill line.
OVER TEMP alarm	Turn off the Hotline and remove it from service. It must be repaired or replaced.
Hot Cabinet	Blocked air vents on the bottom or the back of the unit?

NOTE:
Room temperature above 40 C may cause the Hotline to shut down and alarm. In this unusual situation, turn the power switch off and allow the unit to cool down before returning it to service.

Unit does not warm to 39 C but does warm to 37 C	Jumper in 38 C position. See "Maximum Temperature Setting".
Hard to install the disposable	Grease O-rings in the socket as per the instructions in this manual. See "Maintenance".
Water leaks at the socket where the disposable plugs into the unit.	Replace O-rings. order P/N 80-04-001

TESTING

Alarm Testing

Note: Alarm testing requires a disposable set to be installed and the unit operating. Non-sterile disposables are available from Level 1 for this purpose. P/N L-80-N/S

Alarm Test Switch: The Hotline is equipped with a membrane switch on the side label. Pressing this switch activates all alarm conditions. (Figure 6)

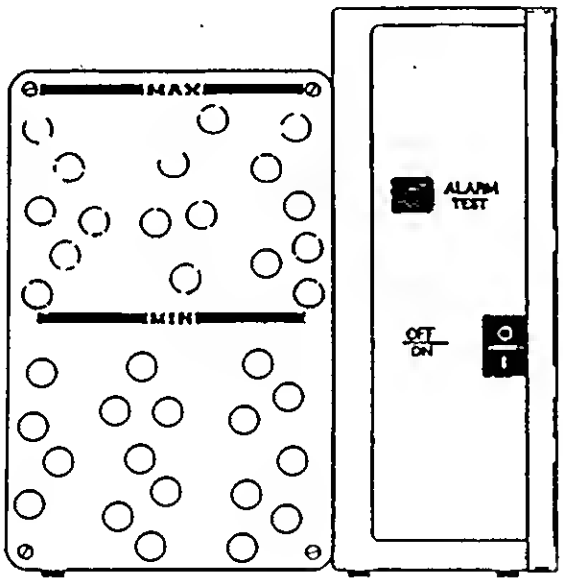


FIGURE 6 ALARM TEST SWITCH

To Test the Hotline Alarm Circuitry:
1 Press the alarm test switch.
2 Observe that the green LED goes out.
3 The three red LED's will light.
4 The audio alarm will sound.
5 Water will stop circulating. (Figure 7) (This can be checked by observing the return port inside the water tank.)

Note: If any alarm conditions are not met remove the unit from service.

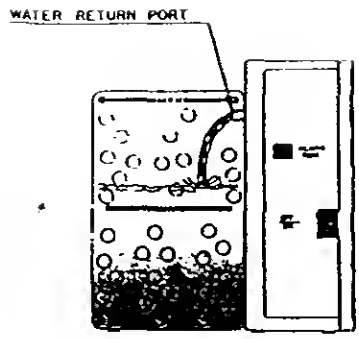


FIGURE 7 WATER CIRCULATING

Add Water Alarm: The Hotline is equipped with a float switch which senses the water level in the water tank. When the water is to low, the ADD WATER alarm will activate.

To test the add water alarm circuit:
1 Unscrew the fillport plug on the water tank.
2 Gently depress the float switch. (This action will simulate the low water condition.) (Figure 8)
3 Observe that the green LED goes out.
4 The red ADD WATER LED will light.
5 The audio alarm will sound.
6 Water will stop circulating.

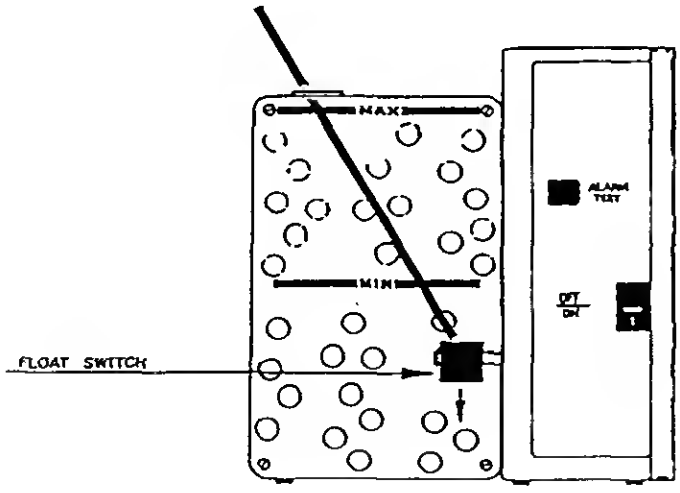


FIGURE 8 DEPRESS FLOAT SWITCH

Disposable Alarm: An interlock switch located in the Disposables Socket senses a properly installed Disposable Set. When the switch does not sense a disposable the DISPOSABLE alarm will activate.

To test the Disposable Alarm circuit:
1 Slowly remove the Disposable set from the Hotline.
2 Observe that the green LED goes out.
3 The red DISPOSABLE LED should light.
4 Audio alarm will sound.
5 Water will stop circulating.

In any alarm condition the pump should not be running. A small amount of water dripping from the disconnection is normal and should stop in a few seconds.

Over Temperature Alarm: The Hotline is equipped with circuitry and temperature sensors to monitor temperature. An over temperature condition 41.5 C ± .5 C will be sensed. This will cause the unit to stop operating and the OVER TEMP alarm to activate.

To test the over temperature alarm:
1 The distilled water level should be at the MIN level.
2 The Disposable Set in place and the unit should be running at an operating temperature of approximately 40 C.
3 Remove the fill port plug from the water tank and SLOWLY add distilled water which has been heated to 45 to 50 C. (Figure 9)
4 As the temperature of the unit approaches 41 C the OVER TEMP alarm will activate.
5 Observe that the green LED goes out.
6 The red OVER TEMP LED should light.
7 The Audio alarm will sound.
8 Water will stop circulating.
9 After confirming the above turn the unit off and change the distilled water in the water tank with cooler distilled water.
10 Restart the unit and confirm normal operation.

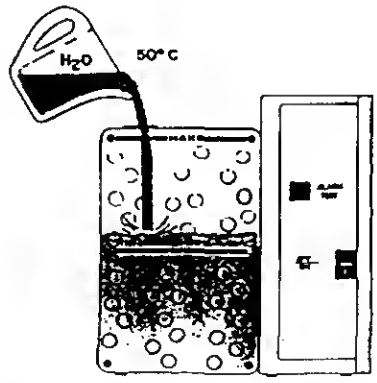


FIGURE 9 ADD HOT WATER

CALIBRATION

Verify Displayed Circulating Water Temperature:

CAUTION: Precision thermometry equipment accurate to 1/10 of 1 Celsius degree and traceable to the National Bureau of Standards is required for correct calibration of the Hotline.
Units requiring recalibration should be returned to the factory. See the Warranty and Service sections of this manual.

Materials and tools required:
Hotline thermal well part number 80-03-003
Thermometer ± .1 Celsius degrees accurate and NBS traceable
with a probe size of: .099" OD max
.50" - 1.50" long
Setup:
Fill water tank with 650 mls of distilled water so that the water level is at MIN.
Install thermal well into the disposables socket.
Turn the machine power switch on and allow machine to warm up for 20 minutes.

Verification:
Insert your thermometer probe fully into well. (figure 10)
Allow thermometer to stabilize.
Compare thermometer reading to Hotline LCD display.

Thermometer will be within ± .3 C of the LCD display for the properly calibrated unit

Caution: If your Hotline fails to operate as described in the TESTING or CALIBRATION procedures remove the unit from service and call Level 1 for repair.

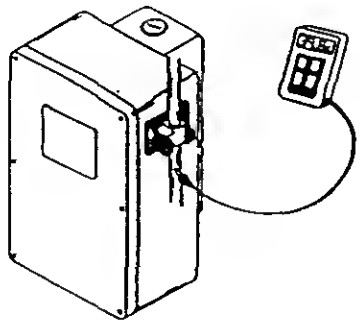


FIGURE 10 TEMPERATURE VERIFICATION

Recomended Maintenance and Calibration Check List

Write your date of purchase here_____

Write your serial number here_____

30 days maintenance tasks

Change distilled water

Grease O-ring seals

Test alarm switch

12 months maintenance tasks

Change distilled water

Test alarm switch

Test float switch

Test disposable switch

Test over temperature alarm

Replace O-ring seals

Verify temperature calibration

You may photo copy this form for your record keeping

Notes:

PHYSICAL SPECIFICATIONS

Height 9.5"
Length 8.3"
Width 7.0"

Weight dry 7.6 lbs
Weight wet 11 lbs

Weight, Shipping 8 lbs.

ELECTRICAL SPECIFICATIONS:

Input Voltage 110-130 VAC
Operating Frequency 50-60 Hz
Operating Current 3.0A

Leakage Current:
Enclosure or Chassis <100uA
Patient Connection <10uA

Power Cord 18/3 SJT x 12'

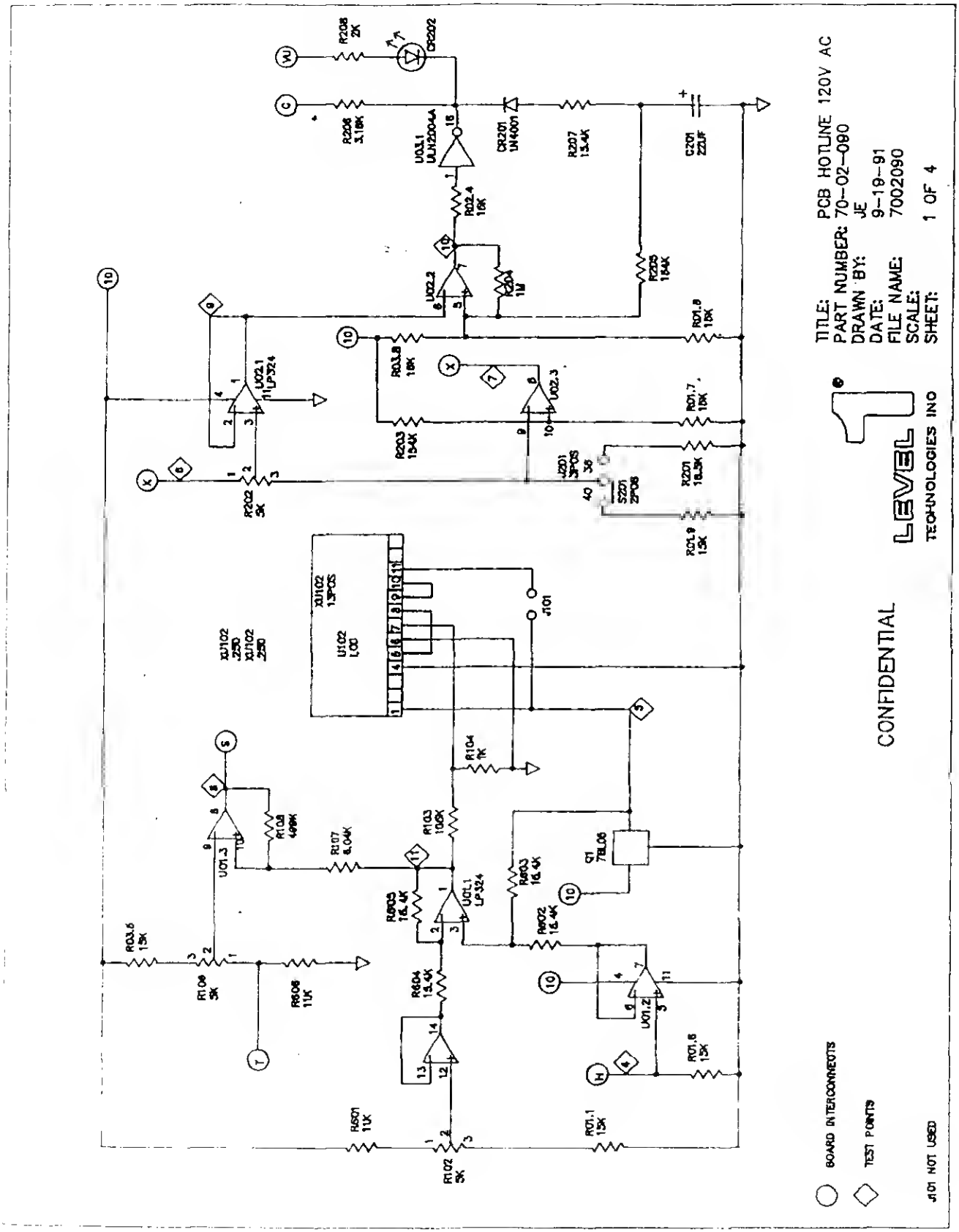
Plug Hospital Grade

Operating specifications

Source Temperature 39.5 C ±.5 C
Max Height on I.V. Pole 42"

ELECTRICAL SCHEMATICS AND PARTS LIST

The Electrical schematics in this manual are for reference only. They are not intended for user service. Any service performed on this unit not authorized by Level 1 will void the warranty and transfer liability for any malfunction to the servicing organization. Level 1 reserves the right to make changes, without further notice, to any products herein to improve reliability, function, or design.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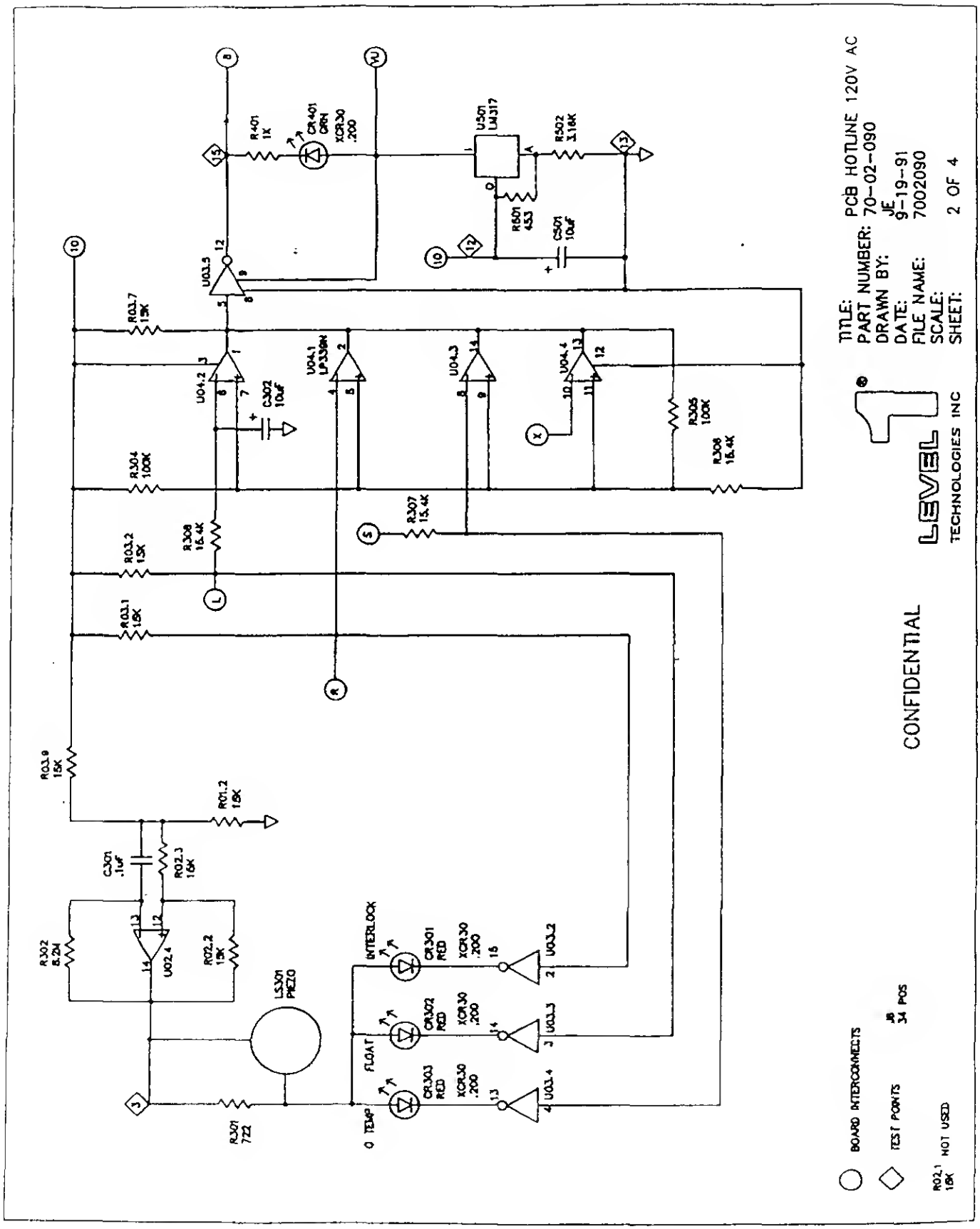
PART NUMBER: 70-02-090
DRAWN BY: JE
DATE: 9-19-91
FILE NAME: 7002090
SCALE:
SHEET: 1 OF 4
LEVEL ONE
TECHNOLOGIES INC
CONFIDENTIAL
BOARD INTERCONNECTS
TEST POINTS
J101 NOT USED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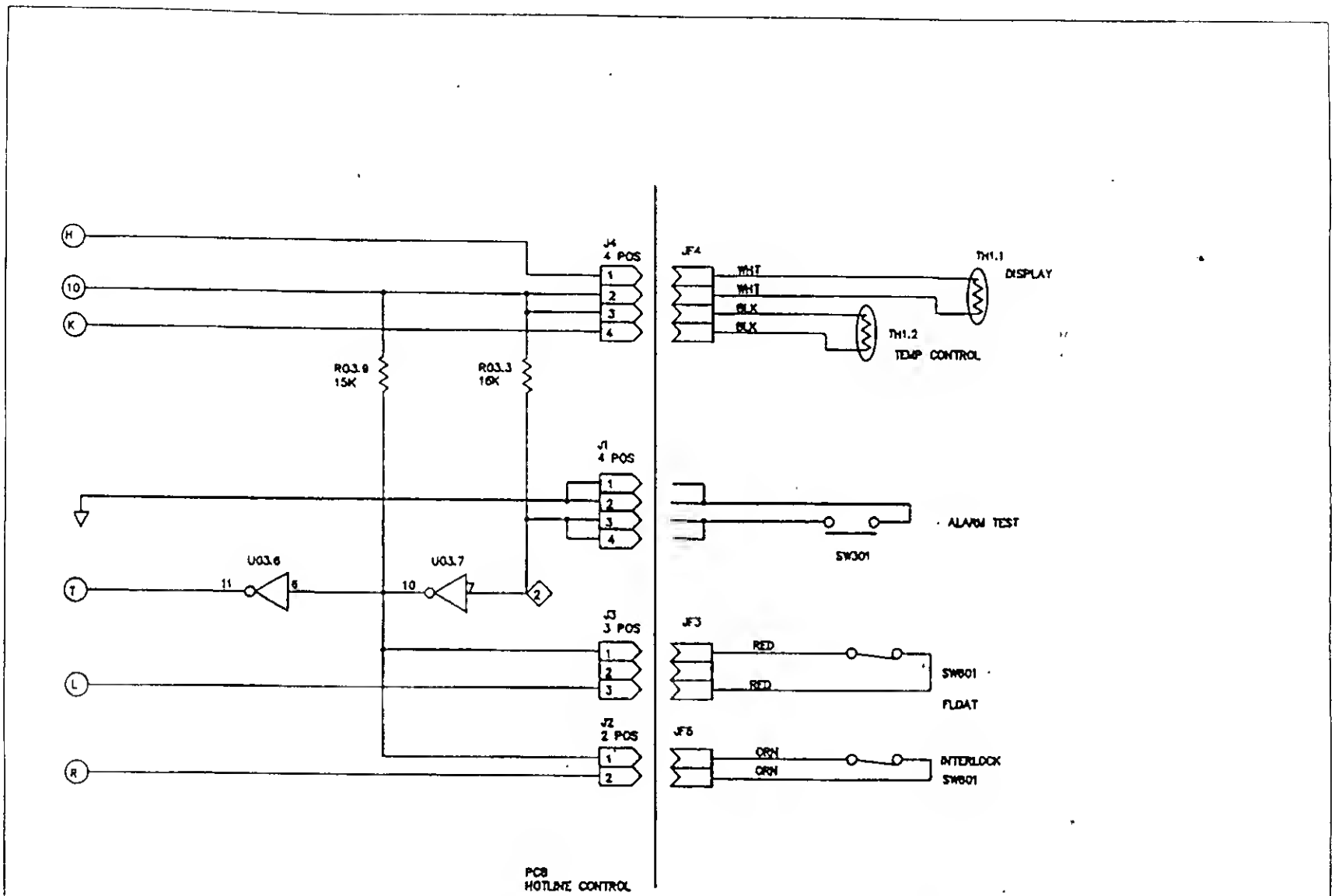
DRAWN BY: JE
DATE: 9-19-91
FILE NAME: 7002090
SCALE:
SHEET: 2 OF 4
CONFIDENTIAL
LEVEL
TECHNOLOGIES INC
BOARD INTERCONNECTS
TEST POINTS
J6 34 POS
R02.1 15K NOT USED
R401 1K
CR401 GRN XOR30 .200
U501 LM317
R502 3.16K
R501 453
C501 10uF
U03.5
R03.7 15K
U04.2
C302 10uF
U04.1 LM358N
U04.3
U04.4
R305 100K
R306 16.4K
R304 100K
R308 16.4K
R307 15.4K
R03.2 15K
R03.1 15K
R03.9 15K
R01.2 15K
C301 .1uF
R02.3 15K
R302 8.2K
U02.4
R02.2 15K
LS301 PIEZO
INTERLOCK
CR301 RED XOR30 .200 16
U03.2
CR302 RED XOR30 .200 14
U03.3
FLOAT
CR303 RED XOR30 .200 13
U03.4
R301 732
O TEMP



CONFIDENTIAL

LEVEL 1 TECHNOLOGIES INC

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DRAWN BY:	JE
DATE:	9-19-91
FILE NAME:	7002090
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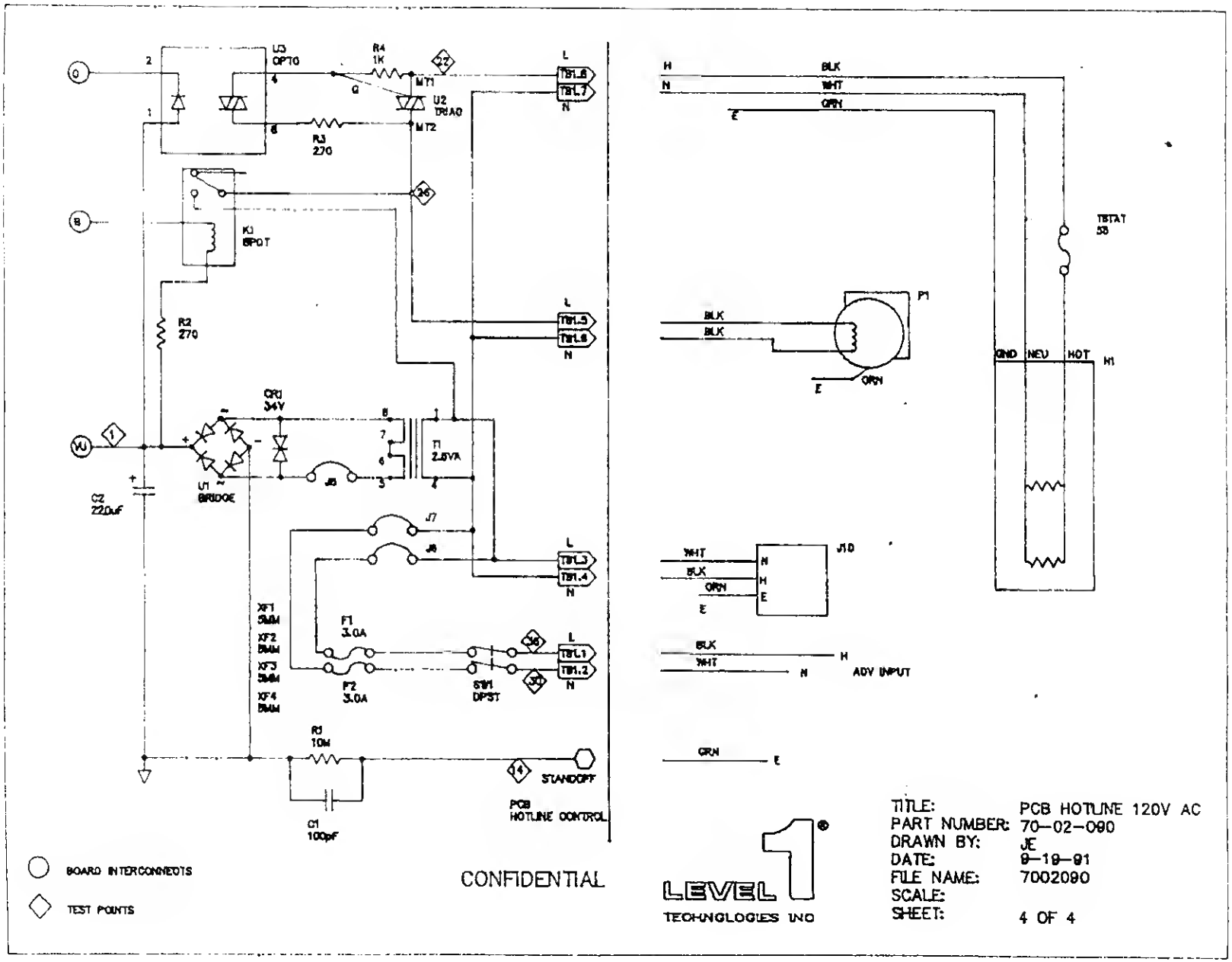
SHEET:	3 OF 4

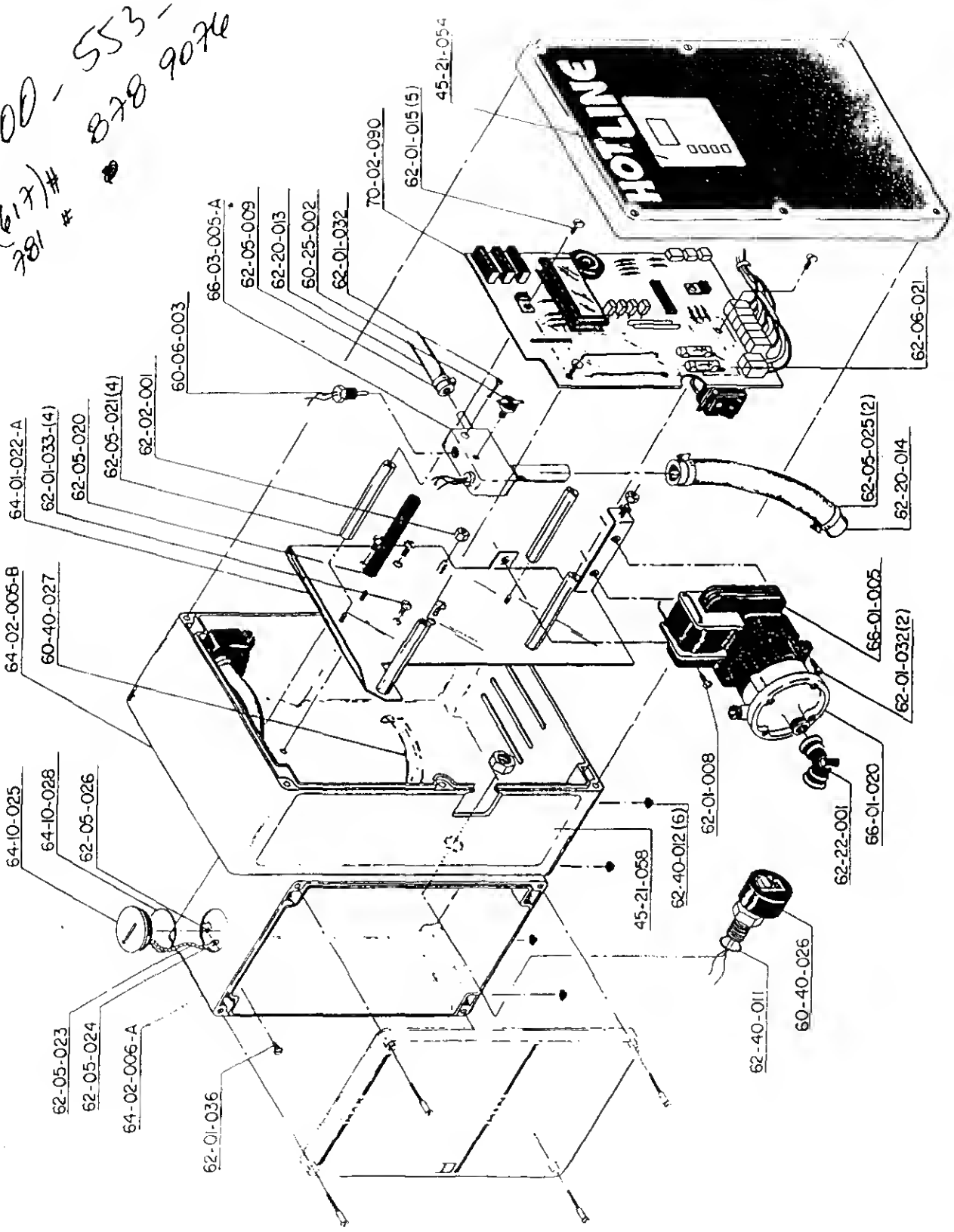

U3 OPTO
R4 1K
MT1
U2 TRIAC
MT2
R3 270
K1 SPDT
R2 270
CR1 34V
T1 2.5VA
U1 BRIDGE
C2 220uF
J7
J8
XF1 5MM
XF2 5MM
XF3 5MM
XF4 5MM
F1 3.0A
F2 3.0A
SW1 DPST
R1 10M
C1 100pF
STANDOFF
PCB HOTLINE CONTROL
TB1.8
TB1.7
TB1.5
TB1.6
TB1.3
TB1.4
TB1.1
TB1.2
L
N
BOARD INTERCONNECTS
TEST POINTS
CONFIDENTIAL
H
N
BLK
WHT
GRN
E
TSTAT 5B
P1
GND NEU HOT H1
J10
ADV INPUT
LEVEL 1
TECHNOLOGIES INC
TITLE: PCB HOTLINE 120V AC
PART NUMBER: 70-02-090
DRAWN BY: JE
DATE: 9-19-91
FILE NAME: 7002090
SCALE:
SHEET: 4 OF 4

Assembly Description

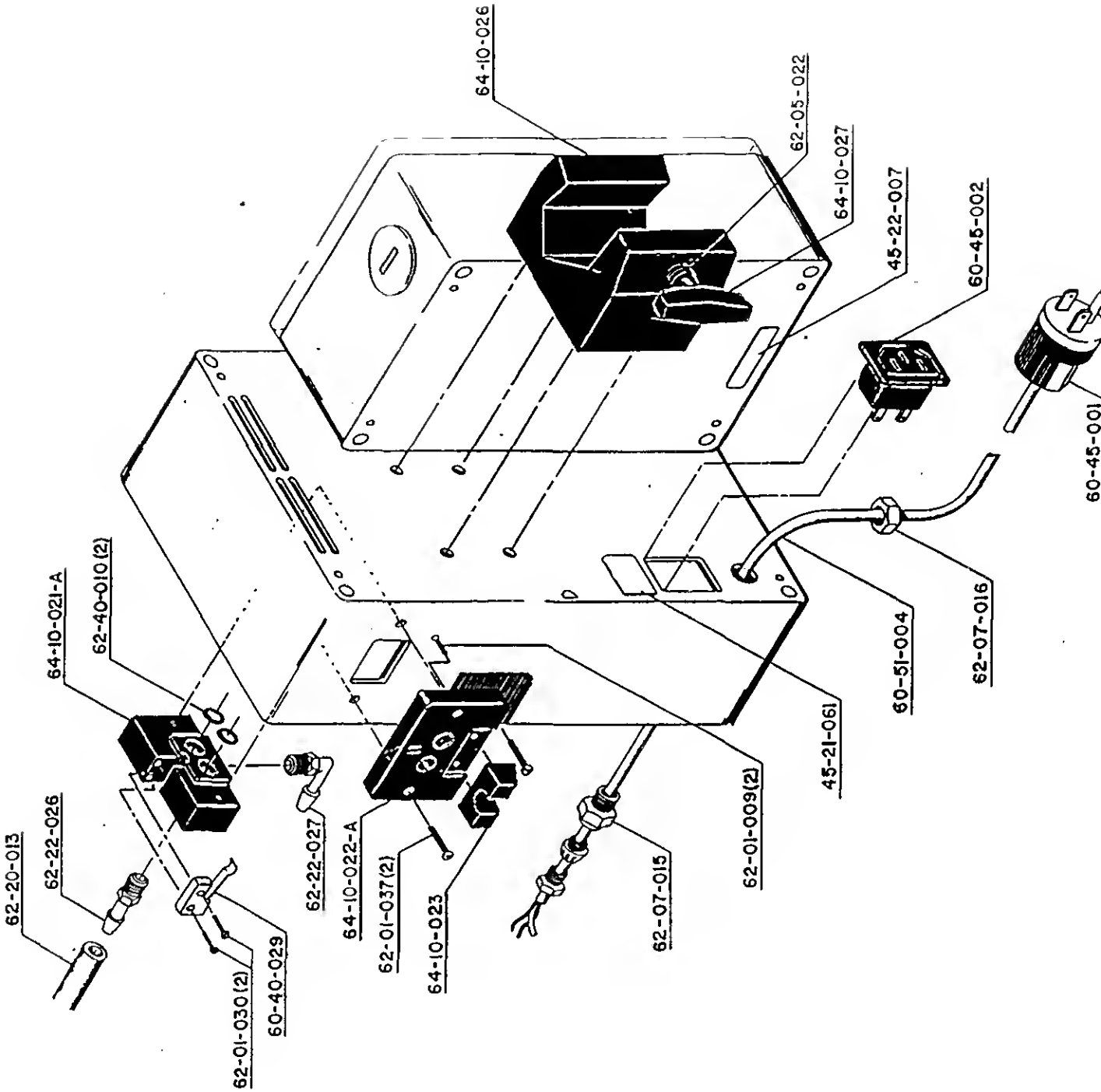
70-10-090 A, PCB KIT HOTLINE 120V AC

ITEM	REFERENCE	DESCRIPTION
60-01-001	R207	E, RES. 15.4 K MF1/8W1% RN55D
60-01-001	R306	E, RES. 15.4 K MF1/8W1% RN55D
60-01-001	R307	E, RES. 15.4 K MF1/8W1% RN55D
60-01-001	R308	E, RES. 15.4 K MF1/8W1% RN55D
60-01-001	R602	E, RES. 15.4 K MF1/8W1% RN55D
60-01-001	R603	E, RES. 15.4 K MF1/8W1% RN55D
60-01-001	R604	E, RES. 15.4 K MF1/8W1% RN55D
60-01-001	R605	E, RES. 15.4 K MF1/8W1% RN55D
60-01-006	R104	E, RES. 1.0 K MF1/8W1% RN55D
60-01-008	R107	E, RES. 6.04 K MF1/8W1% RN55D
60-01-017	R1	E, RES. 10 MEG CF1/2W5%
60-01-019	R606	E, RES. 11.0 K MF1/8W1% RN55D
60-01-020	R2	E, RES. 270 OHM CF1/4W5%
60-01-020	R3	E, RES. 270 OHM CF1/4W5%
60-01-021	R302	E, RES. 8.2MEG CF1/4W5%
60-01-029	R304	E, RES. 100.0 K MF1/8W1% RN55D
60-01-029	R305	E, RES. 100.0 K MF1/8W1% RN55D
60-01-046	R108	E, RES. 499 K MF1/8W1% RN55D
60-01-047	R301	E, RES. 722 MF1/8W1% RN55D
60-01-049	R4	E, RES. 1 K CF1/4W5%
60-01-049	R401	E, RES. 1 K CF1/4W5%
60-01-050	R206	E, RES. 3.16 K MF1/8W1% RN55D
60-01-050	R502	E, RES. 3.16 K MF1/8W1% RN55D
60-01-051	R501	E, RES. 453 MF1/8W1% RN55D
60-01-055	R02.1	E, RES. 15K SIP FRI4-153G RGA
60-01-056	R01.1	E, RES. 15K SIP FRE5-153G RGA
60-01-056	R03.1	E, RES. 15K SIP FRE5-153G RGA
60-01-057	R204	E, RES. 1M CF1/4W5%
60-01-058	R203	E, RES. 154 K MF1/8W1% RN55D
60-01-058	R205	E, RES. 154 K MF1/8W1% RN55D
60-01-061	R201	E, RES 16.5K MF1/8W1% RN55D
60-01-062	R102	E, RES. 5K 20-TURN SIDE ADJ. POT
60-01-062	R106	E, RES. 5K 20-TURN SIDE ADJ. POT
60-01-062	R202	E, RES. 5K 20-TURN SIDE ADJ. POT
60-01-064	R103	E, RES. 105K MF1/8W 1% RN55D
60-02-001	C302	E, CAP. 10UF 25V TANTALUM MALLORY

60-02-001 C501 E, CAP. 10UF 25V TANTALUM MALLORY
60-02-002 C1 E, CAP. 100PF 1KV CERMDISC DD101
60-02-003 C301 E, CAP .1UF POLY CW20C104K OR
60-02-005 C201 E, CAP. 22UF 50V ELEC
60-02-009 C2 E, CAP 220MF 50V ELEC
60-03-005 CR201 E, DIODE 1N4001
60-05-004 Q1 E, IC MC78L05CP OR Z 5V
60-05-008 U01.1 E, IC LP324 QUAD OPAMP ALT MC1416
60-05-008 U02.1 E, IC LP324 QUAD OPAMP ALT MC1416
60-05-009 U03.1 E, IC ULN2004A 7 INPUT
60-05-010 U3 E, IC OPTOCOUPLER MOC3063
60-05-011 U501 E, IC LM317T VREG
60-05-012 U1 E, IC BRIDGE RECTIFIER DB101
60-05-013 U2 E, IC TRIAC MAC3060
60-05-014 U04.1 E, IC LP339N COMPARATOR
60-07-002 CR1 E, VARISTOR SEMICON IN6054
60-10-007 CR301 E, LED RED SIEMENS LDH 3601
60-10-007 CR302 E, LED RED SIEMENS LDH 3601
60-10-007 CR303 E, LED RED SIEMENS LDH 3601
60-10-008 CR401 E, LED GRN SIEMENS LDG 3903
60-10-009 U102 E, LCD MODUTEC BACKLIT BL-300-301-
60-20-006 K1 E, RELAY SPDT P&B T75S5D112-12
60-21-006 T1 E, TRANSF STANCOR SW312 12.6CT .2A
60-22-003 LS301 E, ALARM, AI-256K
60-23-007 F1 E, FUSE 5MM 3.0A PANEL COMPONENTS GMC-3
60-23-007 F2 E, FUSE 5MM 3.0A PANEL COMPONENTS GMC-3
60-30-004 PCB E, PCB HOTLINE CONTROL
60-40-028 SW1 E, SWITCH DPST MARQUARDT 1832.9402
60-46-013 J2 E, HEADER 2 PIN 90 AMP AMP
60-46-014 J3 E, HEADER 3 PIN 90 AMP AMP
60-46-015 J4 E, HEADER 4 PIN 90 AMP AMP
60-46-021 J201 E, HEADER 3POS SAMTEC TSW-103-08SS
60-46-027 J1 E, SOCKET 4 POS STRT AMP 520315-4
60-46-028 XU102 E, SOCKET THRU BOARD 3M
60-46-030 J6 E, HEADER 34 POS 3M 929665-01-34
60-47-026 S201 E, SHUNT 2POS MOLEX 90059.0009
60-47-027 TB1.1 E, T BLOCK PHX FFKDSA/H2-7,62 8EA
60-48-001 XF1 E, FUSE CLIPS LITTLEFUSE 111501
60-48-001 XF2 E, FUSE CLIPS LITTLEFUSE 111501
60-50-013 XLF1 E, WIRE 22AWG BUSS
62-06-018 XU102 M, STANDOFF .250 BIVAR 905-250 2EA
62-06-020 XCR30 M, STANDOFF .2 BIVAR 905-200 4EA



EXPLODED VIEW 1 HOTLINE HL-90



EXPLODED VIEW 2 HOTLINE HL-90

80-02-090 HOTLINE 120V AC

ITEM DESCRIPTION

45-21-011-A P, LABEL, LINE CORD 8/21/89 REV A
45-21-054 P, LABEL FRONT DISPLAY HOTLINE
45-21-058 P, LABEL SWITCH HOTLN
45-21-061 P, LABEL OUTLET HOTLINE 120V
45-22-007 P, LABEL SRL# HOTLN 120V
60-06-003 E, THERMISTOR DUAL
60-25-002 E, T-STAT 3004-40-2
60-40-026 E, FLOAT SW SIDE MNT S.SYS MFS21-E-1
60-40-027 E, MEMBRANE SWITCH NEK
60-40-029 E, SWITCH MICRO ROUND 311SM705-T
60-45-001 E, PLUG, HOSPITAL GRADE HUBBELL 8215-C
60-45-002 E, OUTLET, EURO AUXILIARYPWRDY 43R033121-
60-46-005 E, CONNECTOR 2 POS AMP AMP 640441-2
60-46-006 E, CONNECTOR 3 POS AMP AMP 640440-3
60-46-029 E, CONNECTOR 4 POS AMP AMP 640443-4
60-47-021 E, DISCO INT 22-18 .250X.320 RED AA-8140
60-47-025 E, DISCO INT 22-18 #10 A-521-10
60-47-029 E, DISCO INT 22-18 .110 RED
60-50-001 E, WIRE 18AWG BLACK 300V PVC
60-50-002 E, WIRE 18AWG WHITE 300V PVC
60-50-018 E, WIRE 18AWG GRN/YEL 0,75 4510002
60-50-024 E, WIRE 24 AWG ORN 300V PVC
60-51-004 E, LINE CORD 18/3 SJT ORN CAROL
62-01-008 M, BOLT 6-32 X .375 PAN PHIL HD M/S
62-01-009 M, BOLT 6-32 X .500 FLT HD PHIL M/S
62-01-020 M, BOLT 6-32 X .250 PAN PHIL M/S
62-01-030 M, BOLT 2-56X.500 PAN PHIL
62-01-032 M, BOLT 6-32X.750 PAN PHIL
62-01-033 M, BOLT 10-24 X .75 PAN HD PHIL
62-01-036 M, BOLT M3 X 6MM PAN HD *METRIC*
62-01-037 M, BOLT 10-24 X .750 BTN SKT HD
62-02-001 M, NUT 10-32 ESNA
62-03-001 M, WASHER #10 INT TOOTH LOCK WASHER
62-03-003 M, WASHER #10 STD FLAT
62-05-009 M, CLAMP, 9/16 STEPLESS, 167-14.5-706R
62-05-020 M, 6-32X2.75 STANDOFF ALUMINUM
62-05-021 M, 6-32X2.75 STANDOFF NYLON
62-05-022 M, SWIVEL SCREW CL-43-SSC-SN CARRLANE
62-05-023 M, BEAD CHAIN HOTLINE FILLPORT

62-05-025 M, CLAMP 13/16 21.0-706R
62-06-021 M, INSULATOR HOTLINE PCB
62-07-008 M, TYWRAP, LARGE TY244M
62-07-015 M, STRAIN RELIEF, PG9 STANDARD NECK
62-07-016 M, NUT STRAIN RELIEF, FOR PG9
62-07-019 M, 1/2 O.D. POLYCARB TUBE
62-07-020 M, 1/2 ID POLYCARB BUSHING FOR 62-07-019
62-20-013 M, TUBE SILICONE 1/4 ID X 1/2 OD
62-20-014 M, TUBE SILICONE 1/2 ID
62-22-001 M, FITTING SMC KQL13-00 UNION ELBOW 1/2
62-22-026 M, FIT 1/8 NPT 1/4 BARB STRAIGHT
62-22-027 M, FIT 1/8 NPT 1/4 BARB ELBOW
62-40-010 M, O-RING AS-568-108
62-40-011 M, WASHER FOAM HEYCO 1975
62-40-012 M, RUBBER FEET, 3M SJ-5012 GREY
64-01-022-A M, CHASSIS HOTLINE AC
64-02-005-B M, ENCLOSURE HOTLINE ROSE 03.16 24 09
64-02-006-B M, WATER TANK HOTLINE ROSE 33.12 20 08
64-10-021-B M, INTERLOCK BLOCK HOTLINE DELRIN
64-10-022-B M, PLATE HOTLINE DELRIN
64-10-023 M, CLIP HOTLINE DELRIN
64-10-025 M, FILLPORT COVER HOTLINE ROSE PG 21
64-10-026 M, BRACKET IV POLE DELRIN 3/8 HOTLINE
64-10-027 M, T-BAR KNOB 3/8 INSERT HOTLINE
64-10-028 M, WASHER FOR 64-10-025 ROSE 08000821
66-01-005 E, PUMP AC-1A-MD 115V
66-03-005-A E, HEATER 120V 200W HOTLINE
70-02-090 A, PCB HOTLINE 120V AC